REMARKS

Claims 26-42 and 44-48 are pending in this application. By this Amendment, claim 44 is amended. Support for the amendments to claim 44 can be found in Applicants' specification on page 23, lines 1-29, the Abstract and claim 11 as originally filed, for example. No new matter is added. These amendments supplement Applicants' July 27, 2009 Amendment, the arguments from which are not repeated here. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The courtesies extended to Applicants' representative by Examiner Brainard at the interview held August 7, 2009, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

The Office Action rejects claims 44-46 under 35 U.S.C. §103(a) over U.S. Patent No. 4,939,678 to Beckworth Jr. in view of U.S. Patent No. 5,739,907 to Chen. The rejection is respectfully traversed.

Independent claim 44 recites that a first body outputs at least one incoherent light beam and the optic unit is provided with one or more detectors to detect one or more incoherent light beams transmitted to or reflected from the optic unit, the method comprising the steps of determining a position of the incoherent light beam on the detector, adjusting automatically at least one of a position of the transmitter unit and a movement vector of the second body in response to feedback from the determined position of the light beam on the detector so as to maintain the incoherent light beam on the detector during relative movement of the first and second bodies, measuring the deviation in the movement of the first body with respect to the second body, and recording said measurement so as to provide a measure of said deviation along a movement path of the first and second bodies.

As discussed during the personal interview, Chen is concerned with laser interferometers/interference systems having automatic laser path alignments (see Chen's Abstract, col. 1, lines 5-9 and col. 1, lines 59-62). One of ordinary skill at the time of the invention would understand that a coherent laser beam is needed in order to achieve the interference effect needed for a laser interferometer to work. Specifically, Chen's col. 2, lines 60-64 discloses the importance of securing the phase or coherence of the laser beam.

Therefore, due to the use of a coherent laser beam in Chen, the light beam that will fall on the detector will unlikely be a nice, clean spot of light, but will more likely be a region of interference fringes. Due to optical imperfections, optical surface damage and debris, these interference fringes can be continuously changing, making it more difficult to get an accurate measurement of where exactly the beam falls on the detector. Also, the position of the coherent light beam is more likely to be adversely effected by dirt and environmental factors than an incoherent light beam.

Chen's mechanism is good enough for what they need to accomplish, for instance i.e., to keep two beams overlapped to provide a good interference pattern, but the mechanism is not so good when one of ordinary skill in the art would want a highly accurate and reliable means for straightness. Accordingly, even if Chen did measure and keep record of how the laser interference system drove the moving axes of the machine so as to obtain automatic alignment of the laser beam paths, one of ordinary skill in the art would not want to use that record as a measurement of straightness of the two parts of the machine.

Accordingly, due to the use of an incoherent laser beam, the claimed method for measuring deviation provides a much more accurate measurement of straightness than that of Chen. Furthermore, it would not have been obvious to modify Chen to use an incoherent beam because that would remove the key functionality of the system of Chen, which is to be able to measure distance by an interferometric means. Thus, the modification of Chen to use

an incoherent light beam rather than a coherent light beam would improperly render Chen unsatisfactory for its intended purpose (MPEP §2143.01(V)).

Accordingly, Applicants respectfully request that the rejection be withdrawn.

In view of the foregoing remarks, and as a supplement to the claim amendments and remarks made in Applicants' July 27, 2009 Amendment, is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Rodney H. Rothwell, Jr.
Registration No. 60,728

JAO:RHR/mab

Date: September 23, 2009

OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461